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NORTHERN ROCKY MOUNTAIN
FOREST AND RANGE EXPERIMENT STATION

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THE CHARACTER OF THE 1936 FIRE SEASON IN REGION ONE

By

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The 1936 fire season rated as critical in Montana and northern Idaho, according to the annual survey of Weather Bureau measurements and Forest Service fire danger records made by the Northern Rocky Mountain Forest and Range Experiment Station. The method outlined in Applied Forestry Note No. 67, of January, 1935, was followed in making this rating. The fire control organization was confronted with one of the most hazardous seasons ever experienced in eastern Montana. In western Montana and northern Idaho the season rates as critical but less so than the worst years such as 1919, 1929, and 1934. Weather Bureau records plus fuel moisture measurements at 83 stations, augmented by daily observations of wind velocity, visibility, and humidity at many more, furnish proof for these statements.

July and August, the two most critical months of every fire season, rated 81% of worst probable danger on the ten western fire Forests of Region One this year. This compares with 76% for the same period in 1935, 86% for 1934, which was a year of extreme danger, and 74% in 1933. The rather wide spread in the degree of danger on the different Forests for July and August of this year is indicated by the following rating which shows the percentage of worst probable danger: Kootenai and Lolo, 89%; Cabinet and Flathead, 85%; Kaniksu, 79%; Nezperce, 78%; Coeur d'Alene, 77%; Clearwater, 76%; St. Joe, 75%; and Bitterroot, 73%.

Due to the absence of fire danger stations, similar ratings are not available for the Montana Forests lying from the Continental Divide eastwards. However, Weather Bureau precipitation, temperature, and humidity records indicate that the danger in the north-central and southeast sections approached the worst on record. Evidence of the severity of the season is indicated by records from approximately 110 Montana Weather Bureau stations which show that the period May to July, inclusive, this year, for the entire State was surpassed in dryness by only one year, 1919, since Statewide records began in 1895. The period May to July, this year, was the hottest throughout Montana since inception of weather measurements and during the month of July maximum temperatures equaled or exceeded the all-time records at 36 stations. Relative humidity was below average in the drier zones of eastern Montana. This was especially true in the southeast section as evidenced by the 6:00 p.m. records for Miles City. Here humidity averaged but 58% of normal for the four months, June to September. For 15 consecutive days starting June 26, the 6:00 p.m. humidity was 20% or lower.

Critical seasons can always be identified by extended periods of high fire danger when the absence of favorable "breaks" makes the job of fire control exceptionally difficult. The attached chart shows the daily fire danger by individual Forests, and indicates in detail some of these critical periods in northern Idaho and western Montana during the 1936 fire season. For example, the Kaniksu Forest had Class 5 fire danger 1/ from July 18 to August 17 (31 days) interrupted by only two days of lesser danger. From July 13 to August 17, the Kootenai Forest had only one day below Class 5 fire danger and 17 days of this 36-day period rated as Class 6. The Lolo Forest experienced 42 days of Class 5 and 6, interrupted by seven days of lesser danger. Similar extended periods of critical danger occurred on other Forests.

Abundant June rains over most of northern Idaho and western Montana delayed the approach of critical conditions, and favorable "breaks" in the form of spotted showers came at about 20-day intervals to the Bitterroot, Clearwater, and Nezperce Forests. All Forests but the Bitterroot, Nezperce, and Lolo received good rains on August 24 and 25, and all ten fire Forests were covered by general precipitation September 1 to 4. It varied greatly in amount over the territory.

1/ Classes 5, 6, and 7 of fire danger represent combinations of conditions conducive to rapidity of spread of fire and difficulty of control that cannot be met by the average season protective organization.

While the rains of early September ended the fire season on north slopes and on heavily timbered areas in most of the western part of the Region, rapid drying weather that followed caused high danger to develop on south slopes and burns. Conditions were conducive to rapid spread of fire on such sites through October and even into November.

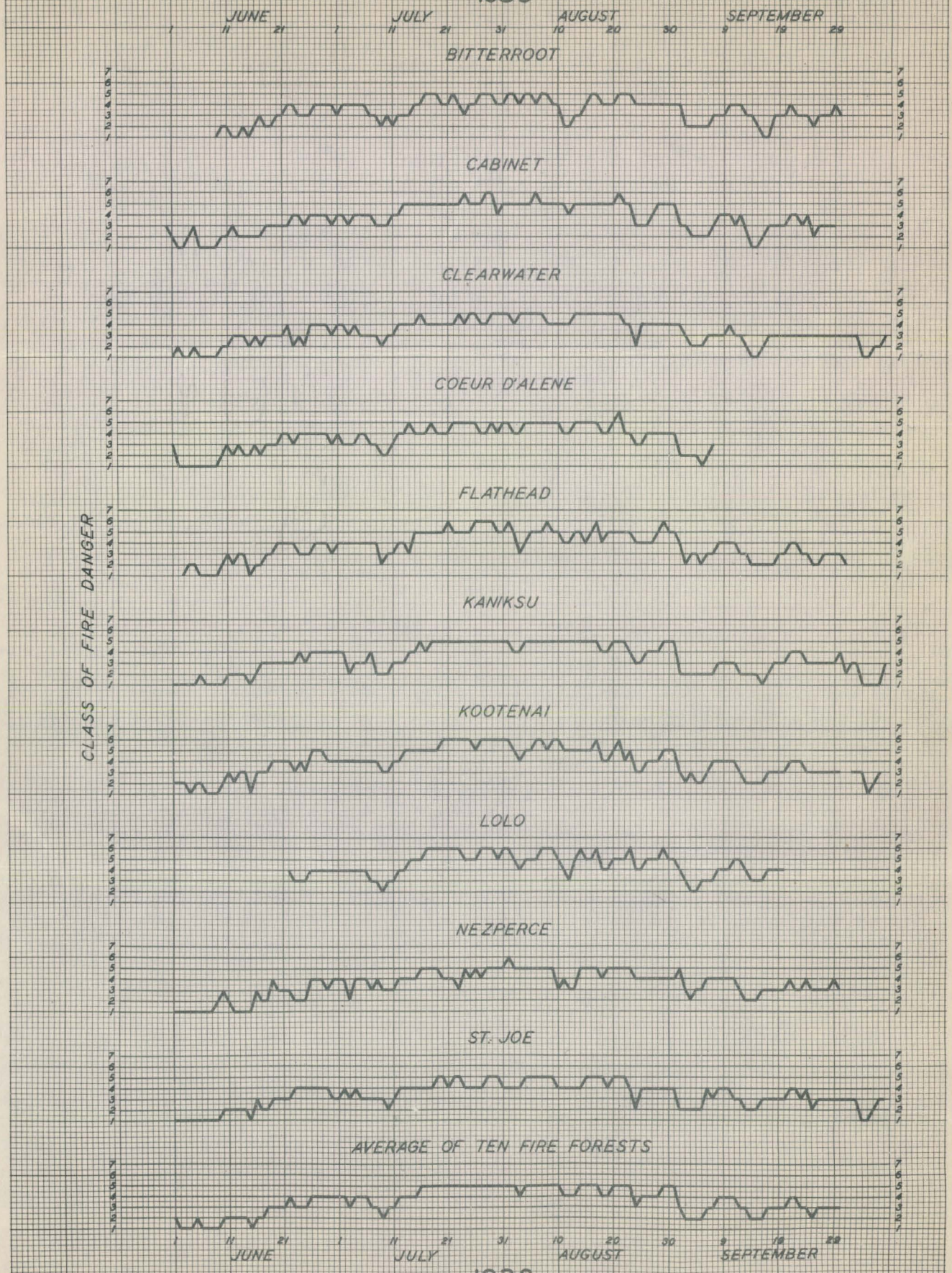
The late season danger is reflected by the precipitation records at 18 northern Idaho forest or adjacent stations which received from 6 to 56% of normal rainfall for October with the average catch per station but 23% of normal. Never before has such a dry October been recorded at the Priest River Experiment Station and only one October since 1893 has been drier over the northern part of Idaho as a whole. This exceptional condition was even worse than the fall of 1935 and also necessitated excessive presuppression expenditures.

Although the frequency of the occurrence of lightning storm days was exactly normal for the period June 21 to September 10, inclusive, the regularity of the disturbances during peak danger periods was another feature that marked the 1936 fire season as critical. From July 16 to August 23, inclusive, lightning storms occurred on 27 of the possible 39 days somewhere on the ten fire Forests of the Region. However, one favorable feature of the past season was that few large concentrations of lightning fires occurred on any one Forest on any one day. The unprecedented number of lightning fires that occurred this year, 1362, were fairly well scattered, 29 being the greatest number reported by a single Forest in one day.

Weather Bureau records indicate, in general, that wind velocities were normal or slightly below normal during the 1936 season. Fewer days of extreme velocity reduced the probability of fires making big runs and helped prevent catastrophies that might have occurred during the extreme July and August periods.

In Region One the Forest Service fire suppression organization controlled 1716 fires during the past season. In spite of conditions that averaged 81% of worst probable fire danger during July and August, only 4% of these fires reached a size of 10 acres or larger.

CLASS OF FIRE DANGER
1936



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